

**Business Management 2321
Business Analytics
Summer Semester 2018
Lecture Sections 3539**

Instructor	Terry Klinker
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Office Hours	Room 311 Fisher hall, Tuesday 12:30-2:30 and by appointment
TAs	Names, schedules, office posted on Carmen
Course Text	<p>Required: “Business Analytics” – A Customized Version of <u>Spreadsheet Modeling for Business Decisions</u>, 5th Edition, by John F. Kros, ISBN 978-1-4652-9977-2</p> <ul style="list-style-type: none"> - This is an on-line version of the book, with only the chapters we will cover in the course. We developed this to reduce the price to students (\$75 vs the \$100-200 for previous texts) and to include on-line quizzes. You must sign up for this on-line version to gain access to required assignments. - Purchase and access the required text at: https://he.kendallhunt.com/khbusmgt2321businessanalytics <p>Optional: <u>Spreadsheet Modeling for Business Decisions</u>, 5th Edition, by John F. Kros ISBN 978-1-4652-6055-0</p> <ul style="list-style-type: none"> - This is not necessary. If you prefer a copy of the book in your hands, you may find it helpful. You may purchase older versions if you prefer; we will work from the 5th edition.
Software	Microsoft EXCEL with the SOLVER add-in.

Note: The classroom is electronics free during lectures - laptop computers or cell phones will not be allowed. Any student violating this policy may be asked to leave the classroom.

COURSE INTRODUCTION

The field of data analytics has its roots in the 1940's, primarily in wartime logistics. Since then, data analysis, analytic techniques and expanded methodologies are increasingly implemented into the business world. Decisions based on operations research models are proven to increase revenues, decrease costs, and significantly impact the fiscal health of business organizations.

Data Analytics models are not limited to operations - models are used in the fields of finance, tax, marketing, human resources, materials, and logistics. Professions in health care, government, and transportation organizations benefit from the use of these models, and the ability to construct them. Recent computer software developments, combined with the rapidity with which data may now be collected, transferred, and shared, has opened the floodgates to the use of data analytics. Most CEOs of the Forbes Top 50 have several data analytics books listed on their list of required reading for senior executives. Students who master the material presented in the course will have a competitive advantage over their peers both in school and in their future careers.

The objective of the course is to familiarize you with several major decision modeling techniques, how to gather data for such models, how to derive and assemble the models, and how to interpret the results and make decisions using the results. Several of the techniques taught in this course are currently used in major corporations on very large scales. In addition, the integration of Microsoft EXCEL (along with the “Goal Seek” and “Solver” add-ins) makes this course an important foundation for future courses at Fisher as well as various business careers.

Professor Klinker has over 30 years of experience in industry, services, and military planning and operations. He has seen the area of modeling develop from a very specialized field, done by a small number of individuals, to a necessary tool to complete in the business world.

PROCEDURES

Students taking BusMGT 2321 are either business majors or persons interested in operations. We will treat each of our class sessions as **business meetings**. As the **meeting leader**, instructors are expected to post an agenda and state the expectations, or end state, for each meeting. You will find those expectations in the course schedule. As **meeting attendees** you are to be prepared for each meeting, to include reading all materials, bringing ideas and questions regarding the material, and completing all deliverables (i.e. assignments, individual practical examples, etc.) prior to the beginning of each class. Meeting attendees are expected to arrive on time and be prepared for the meeting to start as scheduled.

Cell phones and other distractions are not acceptable in business meetings. Turn cell phones off or place them on silent (not vibrate) and remove them from your desk. If you have a legitimate reason that any correspondence cannot be delayed during our classes (i.e. your wife is 8.99999 months pregnant and you are waiting for the "go" call), let the instructor know before class. Personal computers and electronic pads are not allowed during class unless you are told to bring them for a specific subject.

You should be properly attired for class – others perception of you as a business professional will depend, in some part, on your appearance. Unacceptable attire for business meetings includes, but is not limited to, workout clothes, offensive clothing, athletic style hats, etc. Some of these standards are, admittedly, subjective. Remember, you want to start preparing for the business world. There are often future employers on the Fisher campus. Should you be introduced, what impression do you wish to make? ***Our classroom expectations parallel the professional attitude your future employers will demand.*** Our expectations of you, as business professionals, are high, but never higher than the expectations you should put on yourself.

COURSE FORMAT

BusMGT 2321 format for Summer Semester 2018:

- General format:
 - The course runs for 8 weeks, from Jun 5th to July 31st
 - The class meets twice a week, a Tuesday lecture and a Thursday recitation
 - Both weekly sessions introduce new materials; you need to attend both
- There are 4 graded components
 - Exams – 2 midterms and 1 final – 50% of your grade
 - Practical Exercises – three practical exercises (10% each) – 30% of your grade
 - Model Building Exercises – a sequence of 5 models (2% each)
 - On-line Quizzes – a sequence of 5 quizzes (2% each)
 - All grades are counted toward the final grade; none are discarded
 - There is NO CURVE for exams or the course
- The course presentation has three components
 - Video lectures - A series of 10-15 minute lectures to be viewed before weekly lectures, each concentrating on one key point from the text
 - Weekly lectures/recitations - Face-to-face time with the instructors where we work problems, both individually and in groups, develop key points, and answer questions (1hr 20min/55min)

For example, network modeling includes a series of video lectures, from which students should understand the differences in the models, how to set up such models, and then apply the models in a Practical Exercise. During meetings we will present specific issues with these models and work one together.

The following information should help you understand how to excel in the course:

Lectures:

In general, lecture topics will follow the tentative course schedule. It will be assumed that the students will read the textbook material and watch the videos before the lecture.

Homework:

Practice is essential. Suggested homework problems are posted on the course website. **Homework is not collected**, but solutions are available. Students are encouraged to ask questions about the homework problems at any time in class or in office hours with the instructors or the Teaching Assistants.

Class Attendance:

Attendance in this class is highly recommended as the pace of the class is quite fast with new material taught each day. Organize your personal affairs to allow for attendance at every class session. You are responsible for all announcements and assignments made in class by your instructor. Any major changes in the tentative course schedule will be announced in class one week prior to the change and may change the content of material on the exams. If time remains in a class, we may start lecturing with material from the next lecture's content.

Examinations:

All exams in this course are **closed book / closed notes**. The dates of the exams are listed on the tentative schedule. Exams may be short answer, fill-in-the blank, multiple choice, etc. You will not be told the format before the exam as we want you to prepare for the material covered, not the exam format.

We implement the following procedures for exams:

- All students will take the exam as assigned in the schedule
- There will be assigned, random seating for the exams
- There will be multiple versions of the exams

No early exams or makeup exams will be given!

Students missing the exams with a university-approved excuse will be handled on an individual basis. Unless your university-approved excuse is unscheduled, you must coordinate your activity 10 days before missing an exam or assignment to receive credit.

Students missing the final exam with a university-approved excuse will be given an "I" (Incomplete) grade until the exam is taken at a time agreeable to both the student and the professor in accordance with university policy.

If you miss an exam without a university-approved excuse (family vacations, job interviews, weddings, sleeping-in, etc.), you will receive a zero on that exam and will not have an opportunity to take the exam.

If you cannot attend classes and take the exams as scheduled, **drop the course today!**

We will review the midterms in recitation the Thursday following the exam; the exact dates are in the course schedule. If you do not attend the recitation to review your midterms you may or may not get the chance to review it later, depending on the availability of the instructor. Students have the right to ask that a question be re-graded only if they are in class on the day we review the exam. The exams and the answer keys will be collected at the end of recitation; **students not returning their exam will receive a zero grade for the exam and submitted for academic misconduct**. The exams will be kept in our offices until the beginning of the next semester.

Exam dates, as well as all due dates, are attached to the syllabus.

COURSE GRADING

Your course grade will consist of the following components:

Component	Total %
Practical Exercises (3 @ 10% each)	30%
On-Line Quizzes (5 @ 2% each)	10%
Model Building Exercises (5 @ 2% each)	10%
Midterm Exams (2 @ 15% each)	30%
Final Exam	20%
Total	100%

THE COURSE AVERAGE IS NOT CURVED OR ROUNDED IN DETERMINING THE COURSE GRADE!

Final Grade Determination							
Average	Grade	Average	Grade	Average	Grade	Average	Grade
$67 \leq - < 70$	D+	$77 \leq - < 80$	C+	$87 \leq - < 90$	B+		
$60 \leq - < 67$	D	$73 \leq - < 77$	C	$83 \leq - < 87$	B	$93 \leq - \leq 100$	A
$0 \leq - < 60$	E	$70 \leq - < 73$	C-	$80 \leq - < 83$	B-	$90 \leq - < 93$	A-

Grade Requirements:

To pass BusMGT 2321 **you must:**

1. Maintain a 60% average over all graded materials
2. Complete and turn in all graded materials
 - You must complete all 3 Practical Exercises and all 3 Exams
 - You may miss up to 2 combined MBEs and Quizzes, if you miss more than 2 you will not meet course requirements
 - Instructors have the right to reject submissions if the effort is particularly poor
 - Should your submission be rejected, you will be allowed to resubmit it so that you might pass the course, but will receive no points for a resubmitted assignment
3. Have a 50% average over all exams

If you fail to meet any of these three requirements you will receive a failing grade for the course.

Practical Exercises:

Practical exercises will be assigned during the term. Hardcopies of the exercises are due at the beginning of class on the date indicated on the schedule. **No exercises will be accepted after the class begins.** Electronic submissions of the assignments are not accepted for grading. Material from the PEs will be included on the exams.

On-Line Quizzes & Model Building Exercises:

The on-line quizzes are due per the schedule. **If you miss the deadline, you will receive a zero for that quiz; 2% of your grade is gone.** Valid excuses, such as medical issues, will be considered. Waiting until the last minute and having the computer or system crash is not a valid excuse – plan your time and your work accordingly.

MBEs are intended to help you master your MS Excel skills and to think through inputs, outputs, and displays when modelling. You will be given very specific step-by-step instructions on how to build some very simple models. You will be graded on formatting and accuracy. These models will be submitted on-line via drop box. The models will be graded pass/fail – if the model is not exact, it may receive a grade of "0". Before you panic, remember, you have step-by-step instructions and these are simple models. One misstep will not be an issue; several missteps will negatively impact your grade.

NOTE: The **on-line quizzes** and **model building exercises** are designed for easy, high grades. In short, they are designed to give you an easy "A" for 20% of your course grade. If you fail to complete them or do poorly on them, it is a reflection on your effort. Do not postpone doing them and then expect an extension, partial credit, or an extra credit opportunity in response to your lack of performance.

MISCELLANEOUS

Calculator:

It is the **student's** responsibility to bring a functioning calculator to each exam. The instructor will not provide a replacement calculator, batteries, nor will students be allowed to share calculators during an exam. If you haven't replaced the batteries in your calculator since high school, buy batteries later today. **The use of PDA's, MP3 players, and cell phones as calculators are prohibited during exams!** All student materials other than a calculator, extra pencils, and an eraser must be packed away prior to the entering the exam classroom.

Cell Phones:

Cell phones must be turned off during class. If you are expecting to receive an important phone call or text message during class, please leave the classroom to answer the call or read the text message. Any student seen texting or using a cell phone during class will be asked to leave the classroom. During exams, all cell phones must be turned off and stored in the students' book bags.

iPods/MP3 Players:

No iPods or other MP3 players are to be in use during class or exams.

Disability Services (ODS):

If you use the Office of Disability Services, please submit all forms by the 2nd lecture. You may submit the form during lecture, during office hours, or in Room 600 Fisher Hall (ask the office staff to place it in Professor Klinker's mailbox). We may or may not sign ODS forms after the 2nd week of class. Understand that without prior arrangement, special accommodation will not be given by ODS or the instructors.

Academic Misconduct:

Your instructors and the Management Sciences Department expect professional and ethical behavior in this class at all times. We have found that most students are honest and do their own work and that they appreciate knowing that we take academic misconduct very seriously. The Management Sciences Department and the University follow a standard procedure for those who choose not to behave ethically. The student code of conduct can be found on the Internet at studentaffairs.osu.edu/resource_csc.asp. A link to this website will be placed on Carmen.

STUDENT ATHLETES

Student athletes must have their coach or other athletic department representative submit a letter with all scheduled competitions and scheduled practices by the 2nd week of class. Exam conflicts with varsity athlete competitions will be handled on an individual basis only after receiving official notification from the athletic department.

Athletes participating in club sports are not excused from exams and/or individual assignments.

STUDENT GRIEVANCE PROCEDURE

If a student has a specific problem with the administration of this class, the student has the right to discuss the problem with Fisher faculty and staff. The first step in the process is to discuss the problem with the instructor. If the problem cannot be resolved, the next step is to discuss the problem with the Management Sciences department chairperson (Dr. Kenneth Boyer), and then followed by a representative from the Fisher College Deans Office. Failure to follow this progression will usually result in delays in achieving problem resolution or the problem going unresolved.

MAIL

If we are not in our offices, **DO NOT** slide papers, assignments, etc. under our office doors. Please take all papers to the receptionist in the Management Sciences office (600 Fisher Hall). The office staff will time-stamp the papers and will put them into the appropriate Management Sciences mailbox.

E-MAIL

On average, we receive over 100 e-mails daily. A majority of the e-mails are SPAM or may contain viruses that are directed at educators, with subject lines such as "1st Assignment" or "Question about final exam". Our e-mail is filtered twice (OSU university level and Fisher College level) and we run virus protection software on our computers in an effort to separate the "good e-mails" from the "bad e-mails". However, the filters and virus protection software are not 100% efficient.

In an effort to identify and delete malicious e-mails without trashing "good" student e-mails, the following criteria for all student e-mail have been established:

- E-mails must be professional or no response will be given.
- Send e-mails to FCOB BusMGT2321@osu.edu.
- E-mail subject line must begin with **BusMGT 2321** followed by the student's last name and the subject.
For example, if the student Jane Smith were sending an e-mail about the first exam, the subject line would be
BusMGT 2321 Smith Exam #1 Question
- E-mail not conforming to the above will not be read and will be immediately deleted.
- Do not send e-mails from Carmen or use the "Page" function in Carmen.

GRADE NOTIFICATION POLICIES

In accordance with the 1974 Family Educational Rights and Privacy Act (FERPA), the following policies dealing with grades have been adopted:

- Student grades earned in the course (individual assignment / individual practical examples / exam grades and final grades) will not be posted in any public place including bulletin boards and/or web sites.
- Student grades earned in the course (individual assignment / individual practical examples / exam grades and final grades) will not be discussed over the phone as the identification of the student cannot be established with certainty and confidentiality may be violated.
- Student grades earned in the course (individual assignment / individual practical examples / exam grades and final grades) will not be discussed using electronic media including personal (non-OSU) e-mail as the identification of the student cannot be established with certainty and confidentiality may be violated.
- Student grades earned in the course (individual assignment / individual practical examples / exam grades and final grades) may be discussed using electronic media through the student's authorized OSU e-mail account at the discretion of the professor. It is the responsibility of the student to keep the confidentiality of correspondence through their OSU e-mail account.
- The preferred method for discussion of student grades is in person. Students can stop in my office during office hours posted for present or subsequent terms.
- Student grades earned by a student will only be discussed with that student. Student grades for other classmates will not be discussed and/or distributed.
- Student exams during the term will not be distributed to the students to keep but will be stored for a minimum of one quarter to be used as a basis to rectify any and all grade disputes. Student requests to examine exams must be made in writing to allow for the collection of requested materials from the files.

If a student feels that a mistake was made in the determination of the final grade, that student may petition in writing (or through e-mail) for a recalculation of the grade. The individual assignment / individual practical examples / exam grades will be verified and the final grade recalculated; the student will be notified of the results of the recalculation.

BusMGT 2321 Course Schedule

Tentative Course Schedule - Summer Semester 2018

	Date	Topics	Videos	Items Due
1	6/5/2018 Tuesday	Module 1: Decision Analysis Effective Problem Solving The Decision Modeling Process Break Even & Indifference Points Spreadsheet Applications	Video - Break Even Points Video - Indifference Points Video - Indifference Tables Video - 5 Steps in Decision Making Video - Applying the 5 Steps	Quiz 1 - Friday MBE 1 - Friday
2	6/7/2018 Thursday	Module 1: Modeling/Presentation Payoff Tables Decision Making Under Risk, Uncertainty, & Certainty Decision Trees	Video - Decision Making Under Uncertainty Video - Decision Making Under Risk Video - Decision Making Under Risk - Graphic Soln Video - Decision Making Under Certainty Video - Decision Trees	
3	6/12/2018 Tuesday	Module 2: Linear System & Solutions Foundations of Optimization Models Linear Programming Graphic Solutions & Sensitivity Spreadsheet Solutions & Solver	Video - Uses and Benefits Video - Properties and Assumptions Video - Sample Problem Introduction Video - Graphing Video - Graphic Solution Video - Types of Solutions	Quiz 2 - Monday MBE 2 - Friday
4	6/14/2018 Thursday	Module 2: Linear Solutions & Sensitivity Foundations of Optimization Models Linear Programming Graphic Solutions & Sensitivity Spreadsheet Solutions & Solver	Video - Sensitivity Analysis (all 4)	PE #1 (Ind)
5	6/19/2018 Tuesday	Module 3: Exam #1		EXAM
6	6/21/2018 Thursday	Exam Review		
7	6/26/2018 Tuesday	Module 4: Business Models & Solver Basic Business Models Integer and Binary Applications	Videos - Linear Programming 1-8 (Intro, Finance, Production, Staffing)	Quiz 3 - Monday MBE 3 - Friday
8	6/28/2018 Thursday	Module 4: Sensitivity & Solver Basic Business Models	Videos - TBD	
9	7/3/2018 Tuesday	Module 5: Network Models Networking Models Transportation & Logistics Applications	Videos - Network Models, Parts 1 & 2 Videos - Transportation Models, Parts 1 & 2 Videos - Assignments Models, Parts 1, 2, & 3	Quiz 4 - Monday MBE 4 - Friday
10	7/5/2018 Thursday	Module 5: Network Models Assignment Problems Investment over Time	Videos - Maximum Flow Models, Parts 1 & 2 Videos - Shortest Path Models, Parts 1 & 2	PE2 (Grp)
11	7/10/2018 Tuesday	Module 6: Exam #2		EXAM
12	7/12/2018 Thursday	Exam Review		
13	7/17/2018 Tuesday	Module 7: Multiple Criteria Models	Videos - Goal Programming (all 4)	Quiz 5 - Monday MBE 5 - Friday
14	7/19/2018 Thursday	Module 8: Simulation Monte Carlo simulation Random Number Generation Probability Distributions	Videos - TBD	
15	7/24/2018 Tuesday	Module 8: Replication & Scenario Manager Replication Scenario Manager Advanced Spreadsheet Models	Videos - TBD	
16	7/26/2018 Thursday	Course Review Makeup as necessary Review for Final Exam		PE 3 - (Grp)
Final	7/31/2018 Tuesday	Final Exam - Cumulative		EXAM